## 1. Scope :

1.1 Contents

This specification covers the requirements for product performance, test methods and quality assurance provisions of 040/187 POWER STEERING UNIT.

Applicable product description and part numbers are as shown in Appendix 1.

## 2. Applicable Documents :

The following documents form a part of this specification to the extent specified herein. In the event of conflict between the requirements of this specification and the product drawing, the product drawing shall take precedence. In the event of conflict between the requirements of this specification and the referenced documents, this specification shall take precedence.

2.1 AMP Specifications :

| | | |
|---|---|---|
| A. | 109-5000 | Test Specification, General Requirements for Test Methods |
| B. | 114-5159 | Crimping of 040 II Receptacle, Tab contact |
| | 114-5217 | Crimping of 040III Unsealed Receptacle contact |
| C. | 501-5288 | Test Report |

2.2 Commercial Standards and Specifications.

| | | |
|---|---|---|
| A. | JASO D605 | Multi-pole Connector for Automobiles |
| B. | JASO D7101 | Test Methods for Plastic Molded Parts |
| C. | JIS C3406 | Low Voltage Wires and Cables for Automobiles |

## 3. Requirements :

3.1 Design and Construction :

Product shall be of the design, construction and physical dimensions specified on the applicable product drawing.

3.2 Materials :

A. Contact :

| Description | Material | Finish |
|---|---|---|
| Tab(Male) | Brass | Sn planting |
| Receptacle(Female) | Copper alloy | Sn planting |

Fig.1

B. Housing : PBT

3.3 Ratings :

A. Voltage Rating : 12 V DC

B. Temperature Rating : −30℃ to 105℃

3.4 Performance Requirements and Test Descriptions :

The product shall be designed to meet the electrical, mechanical and environmental performance requirements specified in Fig.2 and Fig3. All tests shall be performed in the room temperature, unless otherwise specified.

3.5 Test Requirements and Procedures Summary :

| Para. | Test Items | Requirements | Procedures |
|---|---|---|---|
| 3.5.1 | Examination of Product | Meets requirements of product drawing and AMP Specification 114-5159 114-5217. | Visually inspection. No physical damage |
| | | Electrical Requirements | |
| 3.5.2 | Termination Resistance (Low Level) | 040 5 mΩ Max. (Initial)<br>187 3 mΩ Max. (Initial) | Subject mated contacts assembled in housing to 20 mV Max. open circuit at 10 mA. Fig. 3 AMP Spec. 109-5311-1 |

| Para. | Test Items | Requirements | | | | Procedures |
|---|---|---|---|---|---|---|
| 3.5.3 | Termination Resistance | Wire size ($mm^2$) | | Test Current (A) | Resistance (mΩ) Max. | Measure mill volt drop of contact in mated connectors, Fig. 3. AMP Spec. 109-5311-2 |
| | | 040 | 0.5 | 1 | 5 (Initial) | |
| | | 187 | 2 | 1 | 3 (Initial) | |
| 3.5.4 | Dielectric withstanding Voltage | No creeping discharge nor flashover shall occur. | | | | 1 KV AC for 1 minute. Mated connector. Fig. 4. AMP Spec. 109-5301 |
| 3.5.5 | Insulation Resistance | 100 MΩ Min. (Initial) | | | | Impressed voltage 500 V DC. Mated connector. Fig. 4. AMP Spec. 109-5302 |
| 3.5.6 | Connector Mating Force | 70 N Max. | | | | Operation Speed : 100 mm / min. Measure the force required to mate connectors. AMP Spec. 109-5206 Condition A |
| 3.5.7 | Connector Unmating Force | 70 N Max. | | | | Operation Speed : 100 mm / min. Measure the force required to unmate connectors. (without housing lock) AMP Spec. 109-5206 Condition A |
| 3.5.8 | Connector Locking Strength | 100 N Min. | | | | Apply an axial pull-off load to one of the mated housing. Measure locking strength. Operation Speed : 100 mm / min. |
| | Mechanical Requirements | | | | | |
| 3.5.9 | Handling Ergonomics | No abnormalities allowed in manual mating / unmating handling. | | | | Manually operated |

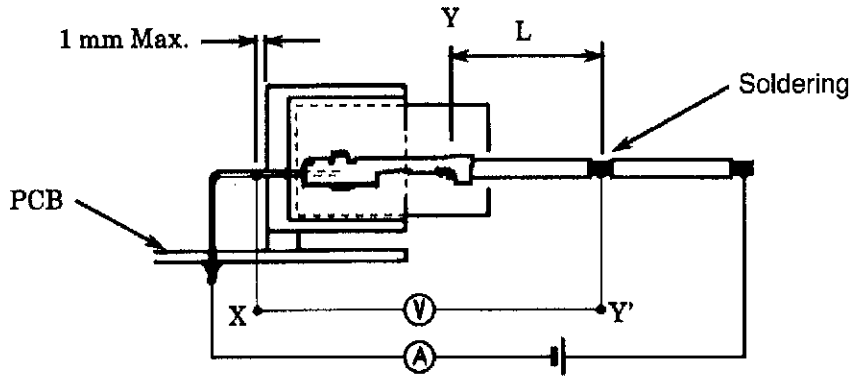
Fig. 2 (End)

3.6 Product Qualification Test Sequence

| Test Examination | Test Group | | |
|---|---|---|---|
| | 1 | 2 | 3 |
| | Test Sequence [a] | | |
| Examination of Product | 1,7 | 1 | 1 |
| Termination Resistance (Low Level) | 2 | | |
| Termination Resistance | 3 | | |
| Dielectric withstanding Voltage | 4 | | |
| Insulation Resistance | 5 | | |
| Connector Mating Force | | 2 | |
| Connector Unmating Force | | | 2 |
| Connector Locking Strength | | 3 | |
| Handling Ergonomics | 6 | | |

(a) Numbers indicates sequence in which tests are performed.

Fig. 2




Deduct resistance of Y-Y' (wire "L") from X-Y'

Fig. 3

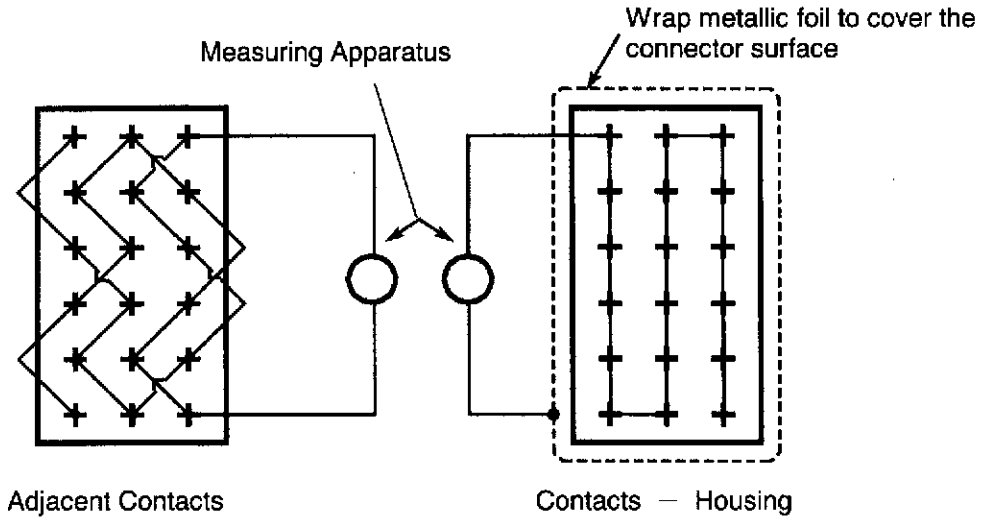



Fig. 4

The applicable product descriptions and part numbers are as shown in Appendix. 1.

| Product Part No. | Description |
|---|---|
| 1123538-2 | .040/.187 Power Steering Unit (Male) |
| 175265-1 | .040 II Contact, Receptacle (S) Sn |
| 316836-1 | .040III Unsealed Contact, Receptacle (S) Sn |
| 6098-2103 | .040/.187 4Pos. Plug Housing Assy (Made by Sumitomo Wiring systems,Ltd.) |
| 6098-1489 | .187 4Pos. Plug Housing Assy (Made by Sumitomo Wiring systems,Ltd.) |
| | .187 Contact, Receptacle Sn (Made by Sumitomo Wiring systems,Ltd.) |

Appendix. 1